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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,249	12/03/2003	Matthew Treadway	EQUUS-095A	5382

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EXAMINER	
LAI, ANNE VIET NGA	
ART UNIT	**PAPER NUMBER**
2636	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,249	TREADWAY, MATTHEW	
	Examiner	Art Unit	
	Anne V. Lai	2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by **Mobius** [US. 5,952,555].

In claims 1-3, **Mobius** discloses an air/fuel ratio gauge for monitoring an engine exhaust mixture of an engine having a plurality of oxygen sensors, comprising a controller (means to process the sensor signals) for receiving the sensor voltage output signals and two gauge displays independently displaying information representative of the associated oxygen sensor operation (abstract; fig. 5; col. 4, lines 24-43; col. 7, line 59- col. 8, line 7); the gauge housing and the two sensor terminals are inherent.

In claims 11-13, **Mobius** discloses an engine system for monitoring an engine exhaust mixture comprising a plurality of oxygen sensors and an air/fuel ratio gauge as claimed in claims 1-3 (abstract; fig. 5; col. 4, lines 24-43; col. 7, line 59- col. 8, line 7).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4-7 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mobius** in view of **Kotwicki et al** [US. 5,363,091].

In claims 4-7 and 14-17, **Mobius** shows in figures 1-4 the sensor voltages from 0 to .8 volts however does not specify a voltage range, **Kotwicki et al** teach the oxygen sensor voltage output ranges are from about 0 volt to about 1 volt corresponding to lean air/fuel mixtures and rich air/fuel mixtures respectively. It would have been obvious to anyone of ordinary skill in the art, the voltage output near 1 volt represent a mixture having greater amount of fuel than air, the output near 0 volt represent a mixture having more air than fuel, and the output voltage at the middle range represent a mixture having substantially equal amount of air and fuel.

5. Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mobius** in view of **Iwata et al** [US. 5,542,248].

In claims 8 and 18, the display of **Mobius** in figure 5 shows plural light emitting spots, however the type of display device is not specified. **Iwata et al** teach a light emitting diode display in the air/fuel ratio control system (46, fig. 1; col. 4, line 58 – col. 5, line 3). It would have been obvious to anyone of ordinary skill in the art, the LED display has been select as a display of choice in a plurality of applications because of its small size, convenient of supply and small cost.

6. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mobius** in view of **Milliken** [EP. 634185].

In claims 9 and 19, **Mobius** fails to disclose the auto zeroing circuit to zero the gauge display at zero levels; **Milliken** teaches a digital display for dual pressure gauge

having automatic zero setting (abstract). It would have been obvious to anyone of ordinary skill in the art at the time the invention was made, to implement the display controller of Mobius with an automatic zero point setting taught by Milliken to provide reliable meter result display.

7. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mobius** in view of **Rossi** [US. 6,371,097].

In claims 10 and 20, **Mobius** is silent about a buffering circuit for attenuating transient oscillation of the sensor information displayed by the gauge display; **Rossi** teaches a buffering circuit (18; fig. 1) formed on a portion of the engine control module to filter out undesired noise signal from the sensor information signal (abstract; fig. 1; col. 3, line 50- col. 4, line 34). It would have been obvious to anyone of ordinary skill in the art at the time the invention was made, eliminating undesired noise or transient oscillation signal from the information signal is a concern in data communication and all signals must be processed through this noise elimination stage before output to obtain a reliable reading of the information signal.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cao discloses a method and apparatus for monitoring oxygen concentration.

Chapotot et al disclose a circuit for processing output signal from a resistive sensor for fuel gauge of a motor vehicle.

Glibbery discloses an electronic weighing apparatus having automatic zeroing circuit for display device.

Tanabe et al disclose pressure gauge with cutting zero fluctuation.

Lher et al disclose a digital voltmeter having self-zeroing phase.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne V. Lai whose telephone number is 571-272-2974. The examiner can normally be reached on 8:00 am to 5:30 pm, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hofsass Jeffery can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AVL
9/2/05

JEFFERY HOFSASS
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